

KONTRAC GP170DB/DC Propulsion converter for trams

KONTRAC GP170DC converts 600 Vdc or 750 Vdc line voltage into propulsion power to control and drive asynchronous traction motors on tram vehicles.

The converter supplies two asynchronous traction motors connected in parallel. The electrical motor drive operates in two modes: traction mode and braking mode.

KONTRAC GP170DB additionally consists of a DC/DC converter which is supplied by a tram's battery of rated 24 Vdc. The additional DC/DC converter enables a tram to be powered on the battery i.e. driving without connecting to the contact line.

FEATURES:

- Tram battery drive i.e. catenary-free drive (type GP170DB)
- Input line voltage 600 Vdc or 750 Vdc
- Latest IGBT technology
- Vector control of asynchronous traction motors
- Easy maintenance
- Light and compact design
- Modular design of power unit and control electronic
- Roof mounting
- Extended ambient temperature range from -40 °C to +40 °C

KONTRAC GP170DC CONSISTS OF:

- DC/DC converter for battery drive (type GP170DB)
- Input contactor and precharging circuit
- Input filter
- One propulsion inverter
- DC link overvoltage protection
- Air-cooled cooling system
- Traction control unit



BASIC TECHNICAL DATA	
Input voltage	600 / 750 V _{DC} from catenary; 350 V _{DC} on board traction battery (*)
Propulsion output	170 kW
Braking chopper	470 kW
Cooling	Forced air-cooling
Size (W x D x H)	1580 x 1000 x 520 mm
Weight	328 kg / 355 kg (*)
Mounting position	Roof
Connecting interface	CAN / MVB / Ethernet

(*) for KONTRAC GP170DB



KONČAR tram in Liepaja, Latvia

TRACTION CONTROL UNIT

Traction control unit (TCU) is based on proprietary embedded control platform which has been used for years in our rail solutions (locomotives, coaches, trams, EMUs, DMUs). TCU is responsible for all sequence control, regulation, protection, communication, supervision and diagnostics tasks. Special care is put on obsolescence issues and modularity.

DIAGNOSTIC AND VISUALIZATION

Proprietary powerful diagnostic and visualization tool (ZZT) is compatible with all our platforms through many generations of control electronic solutions. Configurable event-driven data logging and event recording is integrated in the control electronics. Remote diagnostic functions allow monitoring of all intelligent units from one connection point.

MECHANICAL DESIGN AND COOLING SYSTEM

The converter is designed for roof mounting with IP54 protection. Modular design of power unit and control electronic allows an easy maintenance access enabling easy replacement of power unit module. The increased power density of the power unit module enables compact and light-weighted converter design. Converter box is made from stainless steel and it is intended for use in extended ambient temperature range from -40 °C to +40 °C. The converter is efficiently cooled by forced air.

APPLICATION EXAMPLES

KONTRAC GP170DC is mounted on the roof of 100 % low-floor KONČAR tram TMK 2200 that operates in City of Zagreb, the capital of Croatia and on tram TMK 2300 that operates in City of Liepaja in Latvia. The tram car series TMK 2200 and TMK 2300 are distinguished by its modern and attractive design, superior technical characteristics and comfortable ride. These modern vehicles significantly contribute to efficient and comfort public transport in City of Zagreb and City of Liepaja. For new fleet of trams TMK 2400 for City of Zagreb and TMK 2500 for City of Osijek, both in Croatia, KONTRAC GP170DC and KONTRACT GP170DB are going to be installed.

